Swis# 18 AA 0003

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 95-041

WASTE DISCHARGE REQUIREMENTS
FOR
LASSEN COUNTY
FOR THE CLOSURE OF THE
BIEBER CLASS III LANDFILL
LASSEN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The County of Lassen (hereafter Discharger) owns and operates the Bieber Landfill. The facility is currently regulated by Order No. 74-462, adopted 24 October 1974, which is no longer in conformance with California Code of Regulations (CCR), Title 23, Division 3, Chapter 15 (hereafter Chapter 15). Order No. 74-462 was amended 17 September 1993 by Order No. 93-200 implementing State Water Resources Control Board Resolution No. 93-62 and federal municipal solid waste regulations (Subtitle D). This revised Order directs the Discharger to close the existing landfill and incorporates the minimum performance goals and prescriptive standards contained in Chapter 15 for the closure and post-closure maintenance and monitoring of the landfill.

2. The Discharger submitted an operations plan, dated March 1985; a solid wastewater quality assessment test (SWAT) proposal, dated 24 April 1987; a ground water investigation report, dated 29 April 1988; SWAT sampling report, dated 2 August 1988; a Report of Disposal Site Information (RSDI), dated September 1989; and a Preliminary Closure and Post Closure Maintenance Plan, dated 5 July 1990, (amended 17 October 1991), for closure of the Bieber Landfill (SWIS No. 18-AA-0003).

3. The twenty-acre disposal site comprising of Assessor's Parcel No. 001-130-04, is in Section 14, T38N, R7E, MDB&M, as shown in Attachment "A" which is attached hereto and made part of this Order by reference. The site lies within the Bieber Hydrologic Storage Area (HSA) No. 526.61 as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.

4. The Discharger discharged residential, commercial, and industrial solid wastes in the unlined Class II-2 landfill until January 1994. These wastes are classified as 'nonhazardous solid waste' or 'inert waste' using the criteria set forth in Chapter 15. The facility has been in operation for over forty years. Prior to 1974, two small pits were used for open pit burning. From 1974 to 1987 the landfill was operated as a

sanitary landfill, with three separate areas trenched. The trenches were open and waste was compacted to one end, than backfilled. This operation covered a total of four acres. Since 1988 trenches were eliminated to reduce ponding of water. The landfill contains an estimated 39,000 cubic yards of waste, which extends to a depth of 12 feet and occupies less than five acres of the site. A transfer station was installed in 1989 but not permitted by the CIWMB until 4 January 1994. The transfer station eliminated the need to continue solid waste disposal at the site.

5. The facility does not meet the siting criteria as set fourth in Chapter 15, as revised in 1984, and as amended 1 July 1991, and was not constructed with liners in compliance with Title 40, Code of Federal Regulations (CFR), Parts 257 and 258, Resource Conservation Recovery Act (RCRA) Subtitle D (Subtitle D).

SITE DESCRIPTION

6. The facility is one-half mile north of the community of Bieber and Highway 299. Site elevation ranges from 4,136 to 4,140 feet mean sea level (MSL).

7. Land within 1,000 feet of the site is used for sawmill operations and is zoned A-1, general agricultural.

8. The beneficial uses of ground waters within one mile of the facility are domestic, industrial, and agricultural supply.

9. The average rainfall for the area is 20 inches per year and the annual mean pan evaporation is 55 inches.

10. The 100-year, 24-hour precipitation event for the site is 3.5 inches as calculated by design storm precipitation data provided by the California Department of Water Resources, *"Rainfall Depth-Duration-Frequency for California."*

11. Surface runoff from the site is generally to the southwest and eventually enters the Pit River. The site is 1,500 feet west of the Pit River and is outside the 500-year flood plain.

12. The beneficial uses of the Pit River are industrial and agricultural supply; water contact and noncontact recreation; esthetic enjoyment; hydroelectric power generation; and preservation and enhancement of fish, wildlife, and other aquatic resources.

GEOLOGY

13. The landfill is within the Big Valley portion of Lassen County which is composed of a volcanic terrain with occasional lower intermontane basin. The volcanic rock surrounding Big Valley consist of overlapping volcanic flows ranging in age from early Tertiary period basalts to mid- to late-Tertiary period andesite, basaltic and pyroclastic flows to more recent basalt flows. The youngest flow lie within Big Valley and are exposed in the northwest and southwest ends of the valley. The younger volcanic rocks within the valley overlie undifferentiated pliocene epoch, non-marine sedimentary units, and are overlain by Quaternary period undifferentiated non-marine and lake deposits. The Bieber Landfill is within the area mapped as Quaternary lake deposits.

14. On-site geology revealed an eight- to ten-foot thick surface horizon of dense, coarse interbedded alluvial and possibly fluvial sands and angular gravels overlaying finer sediments believed to be lacustrine in origin. The lake sediment appears to consist of stiff to dense interbedded layers of sandy silt, poorly graded sand and silty sand.

15. Lithology of monitoring wells MW-1 and MW-2 (installed in 1984), indicates predominantly sands and gravels to a total depth of 40 feet, with the exception of approximately 15 feet of clay encountered in MW-2. Lithology of monitoring wells MW-3 and MW-4 (installed in 1988 as part of the SWAT investigation), indicates silty sands to a depth of approximately 30 feet where volcanic bedrock is encountered and the boreholes terminated. Geology across the site is variable and therefore difficult to characterize. The location of the monitoring wells is shown on Attachment "B" which is attached hereto and made part of this Order by reference.

16. Shallow ground water depth ranges from 15 to 30 feet below the site depending on the time of year. The wells were completed in various lithologies suggesting there may not be one continuous aquifer unit at shallow depth beneath the landfill.

17. Ground water movement of the shallow aquifers tends to be toward the northeast in the fall and towards the southwest in the winter and spring. The deeper ground water flow at the site appears to be to the southeast with a gradient of 0.014 ft/ft.

18. The June 1988 SWAT and subsequent monitoring indicate there is no off-site migration of hazardous waste. However, water quality impairment has been discovered at the site, with elevated levels of chemical oxygen demand (COD), chloride, Electrical Conductivity (EC), Total Dissolved Solids (TDS), and t-1,2-dichloroethane in ground water. These compounds were found in MW-1 at elevated concentrations and indicate leachate from decomposition of residual nonhazardous waste. Domestic drinking water is taken from deeper aquifers.

19. Several fault traces have been identified north, south, and west of the site. The nearest known fault is 10 miles north of the site. No known fault transect the site. No determination of maximum probable earthquake has been made.

FACILITY OPERATION

20. "Nonhazardous waste" is being accepted at the transfer station and inert waste is being accepted at the landfill area. The Discharger proposes to close the landfill and a preliminary closure and post-closure maintenance plan has been prepared. A final certified closure and post-closure plan has not been submitted.

21. The Discharger's data demonstrate that natural geologic materials at the site do not prevent the impairment of beneficial uses of ground water from the discharge of "nonhazardous solid wastes" to the landfill during operations. Construction of a clay barrier layer over the landfill during closure will reduce infiltration of rainwater which can cause leachate to form.

CERTIFICATION

22. The landfill has not been certified as being in compliance with siting requirements of Chapter 15.

FINANCIAL ASSURANCES

23. The Discharger has established the *Lassen County Closure Fund*, a trust fund to be used exclusively for the closure of the County's landfills, and a Pledge of Revenue mechanism, to be used for post-closure maintenance and monitoring and for corrective action of all known and reasonably foreseeable releases from the landfill. The closure fund is irrevocable and a means to ensure closure and post-closure maintenance of the landfill.

CEQA CONSIDERATIONS

24. The action to revise waste discharge requirements for this facility is exempt from the provisions of the California Environmental Quality Act, (Public Resources Code Section 21000, et seq.), in accordance with Section 15301, Title 14, California Code of Regulations (CCR).

OTHER LEGAL REFERENCES

25. On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated regulations (Title 40, Code of Federal Regulations, Parts 257 and 258, "federal W regulations" or "Subtitle D") that apply, in California, to dischargers who own or operate Class II or Class III landfill units at which municipal solid waste (MSWLF) is discharged. The majority of the federal MSW regulations became effective on the "Federal Deadline," which was 9 October 1993.

26. This Order implements (1) the Water Quality Control Plan, Second Edition, for the Sacramento River Basin (5A), hereafter Basin Plan; (2) the prescriptive standards and performance goals of Chapter 15; (3) the prescriptive standards and performance criteria of Part 258, Title 40 of the Code of Federal Regulations (Subtitle D); and (4) State Water Resources Control Board Resolution No. 93-62, Policy for Regulation of Discharges of Municipal Solid Waste, adopted 17 June 1993.

PROCEDURAL REQUIREMENTS

27. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharge of wastes to land stated herein.

28. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe closure requirements for this discharge and has provided them with an opportunity for a public hearing, and an opportunity to submit their written views and recommendations.

29. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order No. 74-462 is rescinded, and Attachment I of Order No. 93-200 is amended to delete Item 42, Bieber Solid Waste Disposal Site, and it is FURTHER ORDERED that Lassen County, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. The discharge of additional waste of any kind at this facility is prohibited.

2. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or ground water is prohibited.

B. Discharge Specifications

1. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control, construction, and proper compaction of clay liners and covers.

2. Neither the treatment nor the discharge of wastes shall cause a pollution or a nuisance, as defined by the California Water Code, Section 13050.

3. The discharge of leachate shall not cause degradation of any water supply.

4. Landfill leachate shall be discharged to a location approved by the Regional Board Executive Officer.

C. Facility Specifications

Protection from Storm Events

1. Closure construction shall be accomplished in such a manner so as to prevent inundation or washout due to floods with a 100-year return period. Landfill-related containment structures shall be constructed and maintained to prevent, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping under 100-year, 24-hour precipitation conditions.

2. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes.

3. Annually, prior to the anticipated rainy season but no later than **1 November**, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the facility and to prevent surface drainage from contacting or percolating through wastes.

D. Closure Specifications

Landfill Closure

1. Materials used to construct clay liners and landfill caps shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the closure, post-closure maintenance period of the waste management units.

2. Clay liners and landfill caps shall have a maximum hydraulic conductivity of $1x10^{-6}$ cm/s and a minimum relative compaction of 90 percent. Hydraulic conductivities of liner materials shall be determined by laboratory tests using solutions with similar properties as the fluids that will be contained. Hydraulic conductivities of cap materials shall be determined by laboratory tests using water. Hydraulic conductivities determined through laboratory methods shall be confirmed by approved field testing of the finished liner. Construction methods and quality assurance procedures shall be sufficient to ensure that all parts of the liner and cap meet the hydraulic conductivity, moisture content, and compaction requirements. Proposed design parameters (e.g., soil type, Atterburg limits, moisture content, relative compaction), construction methods and quality assurance procedures for clay liners shall be used in the construction of a test pad prior to liner construction to ensure adequacy of the design, construction, and testing methods.

3. Prior to the construction of any landfill cap, a construction quality assurance (CQA) shall be submitted and approved by Regional Board staff.

4. Methane and other landfill gases shall be adequately vented, removed from the landfill unit, or otherwise controlled to prevent the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water.

5. The closed landfill shall be provided with at least two permanent monuments, installed by a licensed land surveyor, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period.

6. At closure, the landfill shall receive a final cover which is designed and constructed to function with minimum maintenance and consists, at a minimum, of a two-foot thick foundation layer which may contain waste materials, overlain by a one-foot thick clay liner, and finally by a one-foot thick vegetative soil layer, or an engineered equivalent final cover approved by the Board pursuant to Subsections 2510(b) and (c) of Chapter 15.

7. Vegetation shall be planted and maintained over the closed landfill. Vegetation shall be selected to require a minimum of irrigation and maintenance and shall have a rooting depth not in excess of the vegetative layer thickness.

8. The closed landfill area shall be graded to at least a three percent grade and maintained to prevent ponding.

9. Areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion.

10. Landfill closure shall be under the direct supervision of a California registered civil engineer or certified engineering geologist.

11. All containment structures shall be designed and constructed under the direct supervision of a California registered civil engineer or certified engineering geologist and shall be certified by that individual as meeting the prescriptive standards and performance goals of Chapter 15 prior to waste discharge.

E. Financial Assurance

1. The Discharger shall maintain assurances of financial responsibility for initiating and completing corrective action for all known and reasonably foreseeable releases from the landfill. The Discharger shall also maintain an irrevocable closure fund or other means to ensure closure and post-closure maintenance of the landfill.

F. Receiving Water Limitations

Water Quality Protection Standard

1. The Water Quality Protection Standard, as defined in Section 2550.2 of Chapter 15, shall consist of constituents of concern, their concentration limits, the point of compliance, and all water quality monitoring points. Constituents of concern shall include all waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the landfill. Concentration limits in each monitoring medium shall consist of background concentrations of each constituent of concern or concentrations greater than background pursuant to Section 2550.4 of Chapter 15. For each monitoring event, the Discharger shall determine whether there is statistically significant evidence of a release from the landfill and whether the

landfill is in compliance with the Water Quality Protection Standard using procedures specified in Section 2550.7(e) of Chapter 15.

2. The Water Quality Protection Standard is specified in Monitoring and Reporting Program No. 95-041, which is attached hereto and made part of this Order.

3. The concentrations of Constituents of Concern in waters passing through the Points of Compliance shall not exceed the Concentration Limits established pursuant to Monitoring and Reporting Program No. 95-041.

G. Provisions

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.

2. The Discharger shall notify the Board in writing of any proposed change in ownership or responsibility for the facility. This notification shall be given 90 days prior to the effective date of the change.

3. The Discharger shall comply with Monitoring and Reporting Program No. 95-041, which is attached hereto and made part of this Order.

4. If the Discharger, through a detection monitoring program, or the Board finds that there is statistically significant evidence for a new release from the landfill for any monitoring parameter or constituent of concern (established pursuant to Monitoring and Reporting Program No. 95-041 or significant physical evidence of a new release from the landfill, the Discharger shall notify the Board or acknowledge the Board's finding in writing within seven days, and shall implement verification procedures within 30 days, pursuant to Section 2550.7(e)(8)(E) of Chapter 15. Within 90 days, the Discharger shall submit to the Board the results of the resampling and either:

   a. A report that demonstrates pursuant to Section 2550.8(k)(7) of Chapter 15 that a source other than the landfill caused the evidence of a new release, or that the evidence resulted from an error in sampling, analysis, or evaluation, or from natural variation in ground water, surface water, or the unsaturated zone; or

   b. An amended Report of Waste Discharge for the establishment of an evaluation monitoring program, pursuant to Section 2550.9 of Chapter 15, to assess the nature and extent of the new release from the landfill and to

design a corrective action program meeting the requirements of Section 2550.10 of Chapter 15. Within 180 days of determining statistically significant evidence of a release, the Discharger shall submit an engineering feasibility study pursuant to Section 2550.8(k)(6) for corrective action program necessary to meet the requirements of Section 2550.10 of Chapter 15.

5. Within 90 days of establishing an evaluation monitoring program, the Discharger shall submit to the Board an amended Report of Waste Discharge pursuant to Section 2550.9(d) of Chapter 15. The amended Report of Waste Discharge shall address the establishment of a corrective action program pursuant to Section 2550.10 of Chapter 15.

6. The compliance period as defined in Section 2550.6 of Chapter 15 shall begin each time the Discharger initiates an evaluation monitoring program and shall continue until the Discharger can demonstrate either that the landfill has been in continuous compliance with the water quality protection standard for a period of three consecutive years, or that a release did not occur pursuant to Section 2550.9(f).

7. The Discharger or persons employed by the Discharger shall comply with all notice and reporting requirements of the State Department of Water Resources with regard to the construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order or with Monitoring and Reporting Program No. 95-041, as required by Sections 13750 through 13755 of the California Water Code.

8. The Discharger shall maintain waste containment facilities and precipitation and drainage controls, and shall continue to monitor ground water, leachate from the landfill unit, the vadose zone, and surface waters per Monitoring and Reporting Program No. 95-041 throughout the post-closure maintenance period.

9. The Discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or of precipitation and drainage control structures.

10. The post-closure maintenance period shall continue until the Board determines that remaining wastes in the landfill will not threaten water quality.

11. The Discharger shall comply with the Standard Provisions and Reporting Requirements, dated September 1993, which are hereby incorporated into this Order. The Standard Provisions and Reporting Requirements contain important provisions and requirements with which the Discharger must comply. A violation of any Standard Provision and Reporting Requirements is a violation of these waste discharge requirements.

12. The owner of the waste management facility shall have the continuing responsibility to assure protection of usable waters from discharged wastes and from gases and leachate generated by discharged waste during the closure and post-closure maintenance period of the landfill and during subsequent use of the property for other purposes.

13. The Discharger shall document the Existing Footprint of the waste that has been incorporated by standard landfill practices on **9 October 1995** and shall submit a copy of documentation in the form of a report by **15 January 1996.**

14. The Discharger shall provide proof to the Board **within sixty days after completing final closure**, that the deed to the landfill property, or some other instrument that is normally examined during title search, has been modified to include, in perpetuity, a notation to any potential purchaser of the property stating that: (1) the parcel has been used as a municipal solid waste landfill (MSWLF); (2) land use options for the parcel are restricted with the post-closure land uses set forth in the post-closure plan and in waste discharge requirements for the landfill; and (3) in the event that the Discharger defaults on carrying out either the post-closure maintenance plan or any corrective action needed to address a release, then the responsibility for carrying out such work falls to the property owner.

15. The Discharger shall maintain waste containment facilities and precipitation and drainage controls, and shall continue to monitor ground water, leachate from the landfill, and surface waters pre Monitoring and Reporting Program No. 95-041 throughout the active life of the waste management units and the post-closure maintenance period.

16. In the event of any change in ownership or responsibility for construction or operation of this landfill, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Board.

17. The Discharger shall complete the tasks outlined in these waste discharge requirements and the attached Monitoring and Reporting Program No. 95-041 in accordance with the following time schedule:

	Corrective Action	Compliance Date
a.	Submit Engineering Feasibility and Corrective Action Program reports and Water Quality Protection Standards report.	**15 June 1995**
b.	Submit Closure/Post-Closure Maintenance Plans for the landfill, including design/construction plans for landfill cap.	**15 January 1996**
c.	Complete landfill cover permeability test and submit test pad certification report.	**15 July 1996**
d.	Complete construction of final landfill cap.	**15 September 1996**
e.	Submit final landfill closure certification report.	**15 January 1997**

18. The Discharger shall comply with all applicable provisions of Chapter 15 and 40 CFR Part 258 that are not specifically referred to in this Order. If there is a conflict either between Chapter 15 and Part 258, the more stringent requirements shall apply.

19. The Board will review this Order periodically and will revise these requirements when necessary.

I, WILLIAM H. CROOKS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 24 February 1995.

WILLIAM H. CROOKS, Executive Officer

GDD:djc

Attachments

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 95-041

FOR LASSEN COUNTY
FOR THE CLOSURE OF THE
BIEBER CLASS III LANDFILL
LASSEN COUNTY

Monitoring data indicate that a release of waste has been detected in downgradient monitoring wells. These waste discharge requirements require the Discharger to develop evaluation monitoring and corrective action programs that comply with the provisions of Title 23, California Code of Regulations (CCR), Division 3, Chapter 15, Article 5, Section 2550.10. Closure and capping of the landfill will serve as part of a corrective action under Article 5 of Chapter 15.

Compliance with this Monitoring and Reporting Program, and with the companion Standard Provisions and Reporting Requirements, is ordered by Waste Discharge Requirements Order No. 95-041. Failure to comply with this Program, or with the Standard Provisions and Reporting Requirements, constitutes noncompliance with the waste discharge requirements and with the Water Code, which can result in the imposition of civil monetary liability.

REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in the Standard Provisions and Reporting Requirements. Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements.

In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Historical and current monitoring data shall be graphed at least once annually. Graphs for the same constituent shall be plotted at the same scale to facilitate visual comparison of monitoring data. A short discussion of the monitoring results, including notations of any water quality violations shall precede the graphical and tabular summaries.

Quarterly, semi-annual, and yearly monitoring reports shall be submitted to the Board by the **15th day of the month** following the calendar quarter in which the samples were taken.

The results of any monitoring done more frequently than required at the locations specified herein shall be reported to the Board.

An annual report shall be submitted to the Board which contains both tabular and graphical summaries of the monitoring data obtained during the previous year. The report shall include a discussion of the progress toward reestablishment of compliance with waste discharge requirements and the water quality protection standard.

WATER QUALITY PROTECTION STANDARD

The Discharger shall submit by **15 June 1995** a report establishing Water Quality Protection Standards for the site. The Water Quality Protection Standard, as defined in Section 2550.2 of Chapter 15, shall consist of constituents of concern, their concentration limits, the point of compliance, and all water quality monitoring points.

Constituents of concern shall include all waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the landfill. Concentration limits in each medium shall consist of background concentrations of each constituent of concern or concentrations greater than background pursuant to Section 2550.4 of Chapter 15. For each monitoring period, the Discharger shall determine whether there is statistically significant evidence of a release from the landfill and whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Section 2550.7 of Chapter 15.

If the Discharger, through a detection monitoring program, or the Board finds that there is statistically significant evidence for a release from the landfill for any monitoring parameter or constituent of concern or significant physical evidence of a release from the landfill, the Discharger shall notify the Board or acknowledge the Board's finding in writing within seven days, and shall implement verification procedures within 30 days, pursuant to Section 2550.7(e)(8)(E) of Chapter 15. Within 90 days, the Discharger shall submit to the Board the results of the resampling and either:

a. A report that demonstrates pursuant to Section 2550.8(k)(7) of Chapter 15 that a source other than the landfill caused the evidence of a release, or that the evidence resulted from an error in sampling, analysis, or evaluation, or from natural variation in ground water, surface water, or the unsaturated zone; or

b. An amended Report of Waste Discharge for the establishment of an evaluation monitoring program, pursuant to Section 2550.9 of Chapter 15, to assess the nature and extent of the release from the landfill and to design a corrective action program meeting the requirements of Section 2550.10 of Chapter 15. Within **180** days of determining statistically significant evidence of a release, the Discharger shall submit an engineering feasibility study pursuant to Section 2550.8(k)(6) for a corrective action program necessary to meet the requirements of Section 2550.10 of Chapter 15.

If subsequent sampling of "background" monitoring wells indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the water quality protection standard.

SAMPLING AND ANALYSIS PLAN

A revised Sampling and Analysis Plan shall be submitted to Board staff by **15 June 1995** for approval. The sampling and analysis plan shall include specific methods for leachate, surface water, and ground water quality sample collection, handling, chain of custody control, analytical procedures, and field and laboratory quality assurance and quality control.

WATER QUALITY MONITORING PROGRAM

Proposed Ground Water Monitoring Program

The Discharger shall submit by **15 June 1995**, a proposed revised ground water monitoring system and program in accordance with Article 5 of Chapter 15. The water quality monitoring system and program shall be sufficient to demonstrate compliance, or lack thereof, with the Water Quality Protection Standard established above. Existing water quality monitoring stations and data can be proposed for incorporation in the revised monitoring system and program. The proposal shall include:

1. Proposed conceptual design and location of water quality monitoring points including those at the point of compliance (Section 2550.7);

2. Proposed monitoring parameters, constituents of concern, and their monitoring frequencies (Sections 2550.7 and 2550.8);

3. Proposed concentration limits and/or methods for establishing concentration limits (Section 2550.4); and

4. Proposed statistical methods for determining statistically significant evidence for a release from the landfill.

The Discharger shall also propose a monitoring system and program pursuant to Section 2550.10 of Chapter 15 for determining the effectiveness of any corrective actions.

Ground Water Monitoring

The following monitoring program shall be implemented at the facility to determine compliance with the **Water Quality Protection Standard** established above. The monitoring

network shall consist of a background monitoring well and downgradient monitoring wells. The existing monitoring wells MW-1, MW-2, MW-3, and MW-4 are to be used to determine background and downgradient monitoring wells. The locations of these wells are shown on Attachment "B". A report is required to be submitted by **15 June 1995** that shows seasonal direction of flow and a workplan to construct additional wells on the south side of landfill if needed. Samples from all monitoring wells shall be analyzed and collected at the frequencies indicated in Table I:

Table I
Ground Water Monitoring Parameters/Frequency

Parameter	Units	Frequency
Field Parameters		
Temperature	°C and °F	Quarterly
Ground Water Elevation	Feet and Hundredths, M.S.L.	Quarterly
Specific Conductance	µmhos/cm	Quarterly
pH	pH units	Quarterly
Turbidity	Turbidity units	Quarterly
Monitoring Parameters		
Chemical Oxygen Demand (COD)	mg/L	Quarterly
Total Dissolved Solids (TDS)	mg/L	Quarterly
Chlorides	mg/L	Quarterly
Volatile Organic Compounds[1] (EPA Methods 601 and 602)	mg/L	Quarterly
Constituents of Concern		
Sulfates	mg/L	Annually
Bicarbonate Alkalinity	mg/L	Annually
Nitrate - Nitrogen[2]	mg/L	Annually
Total Kjeldahl Nitrogen	mg/L	Annually
Volatile Organic Compounds[3] (EPA Method 624)	µg/L	5-years
Semi-Volatile Organic Compounds[3] (EPA Method 625)	µg/L	5-years
Organochlorine Pesticide and PCBs[3] (EPA Method 608)	µg/L	5-years
Chlorophenoxy Herbicides[3] (EPA Method 615)	µg/L	5-years
ICP Metals (26 metals)[3] (EPA Method 6010 and 7000 series)	µg/L	5-years

Report all peaks discovered by the EPA test methods. Metals shall be analyzed and reported as totals (except for chromium). Selenium, arsenic, and mercury analyses shall be done by atomic absorption (AA).

[1] As listed in Attachment 1.
[2] To be monitored quarterly for the first year and annually thereafter.
[3] As listed in Attachment 2.

Field and laboratory tests shall be reported in the quarterly monitoring reports. Electrical conductivity results shall be submitted on a site contour map. All parameters shall be graphed so as to show historical trends at each well.

The ground water surface elevation (in feet and hundredths, M.S.L.) in all wells shall be measured on a quarterly basis and used to determine the velocity and direction of ground water flow. This information shall be displayed on a water table contour map and/or ground water flow net for the site and submitted with the quarterly monitoring reports.

Storm Surface Water Monitoring

Surface water samples shall be taken upstream and downstream from the site during the first storm of the rainy season which produces significant flow and quarterly when water is present. Prior to completion of the final cover system, the surface water samples shall be analyzed for the following:

Table II
Surface Water Monitoring Parameters/Frequency

Parameter	Units	Frequency
Field Parameters		
Temperature	°C	Quarterly
Specific Conductance	µmhos/cm	Quarterly
pH	pH units	Quarterly
Turbidity	Turbidity units	Quarterly
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	Annually
Chlorides	mg/L	Annually
Constituents of Concern		
Sulfates	mg/L	Annually
Suspended Solids	mg/L	Annually
Nitrate - Nitrogen	mg/L	Annually
Total Kjeldahl Nitrogen	mg/L	Annually
Total Organic Carbon	mg/L	Annually
Chemical Oxygen Demand	mg/L	Annually
Dissolved Oxygen	mg/L	Annually

LANDFILL MONITORING

The Discharger shall perform site monitoring activities for the landfill units in accordance with the Final Closure and Post-Closure Maintenance Plans. The Discharger shall maintain records of seeps observed within and below the landfill units. Potential leachate seeps shall

be sampled for the constituents listed under "Surface Water Monitoring" per the approved Water Quality Monitoring Plan.

STATISTICAL PROCEDURES FOR DETERMINING SIGNIFICANT INCREASES

The significance of increases in indicator parameters and waste constituents over water quality protection standards shall be established through the use of the statistical procedures in Section 2555.7 of Chapter 15. The Discharger shall analyzed water samples from each water bearing medium separately for the monitoring parameters and shall test the resulting data using either the statistical or non-statistical methods listed in the Standard Provisions (or alternatively methods that meet the Boards requirements of 23 CCR 2550.7(e)(6-10) and 40 CFR 258.53:

a. Parameter that use statistical methods:

   i. pH, TDS, specific conductivity, chloride, sulfate, and nitrate nitrogen

   ii. Each VOC that equals or exceeds its representative MDL in at least ten percent of the samples from the Background Monitoring Points for a monitored water-bearing medium during a given Reporting Period; and

b. Parameter that use non-statistical method:

   The composite monitoring parameter VOC, water consisting of all VOCs listed in Attachment 2.

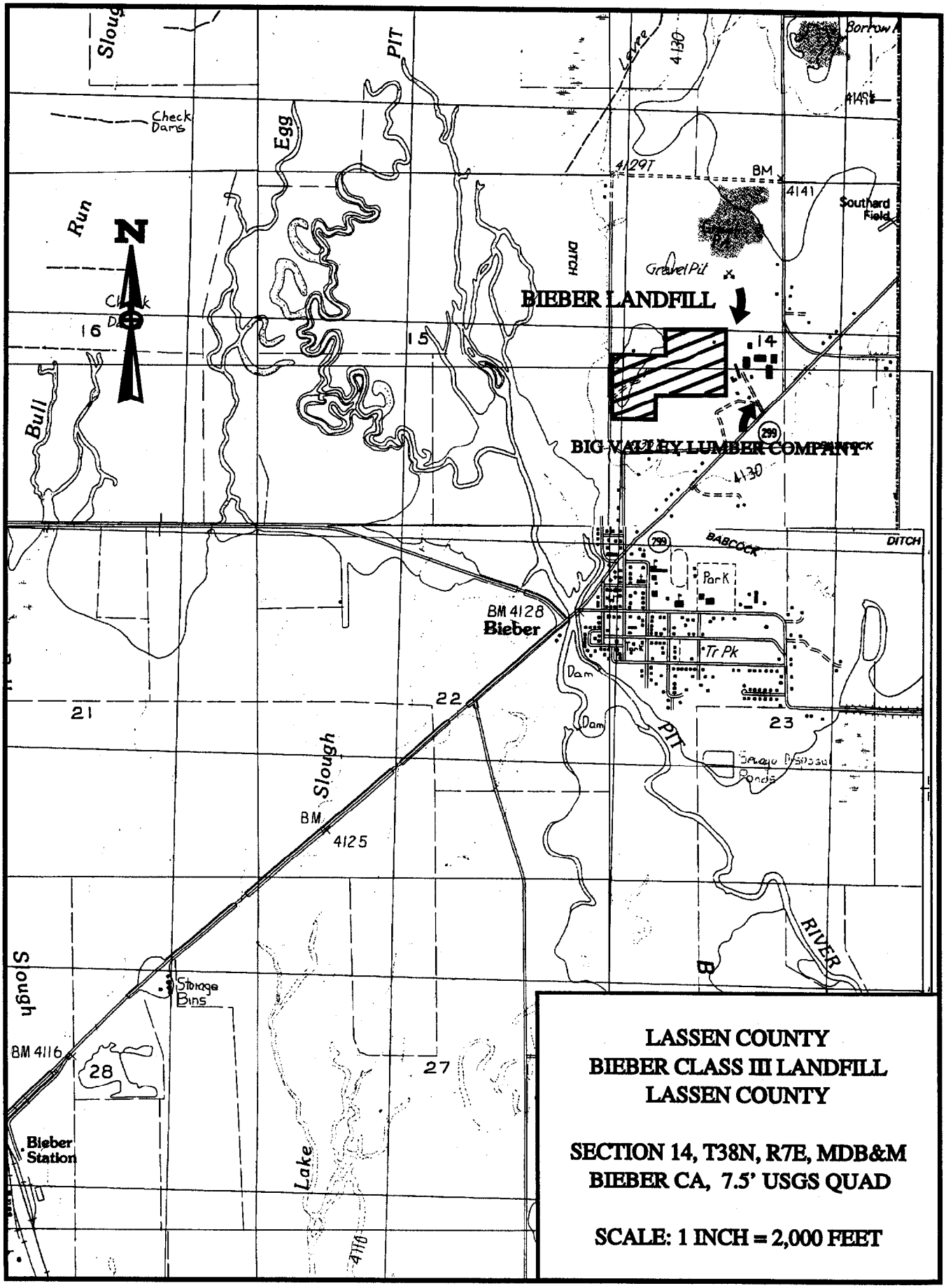
The Discharger shall implement the above monitoring program on the effective date of this Order.

Ordered by _____
WILLIAM H. CROOKS, Executive Officer

24 February 1995
(Date)

GDD:djc

"Attachment A"

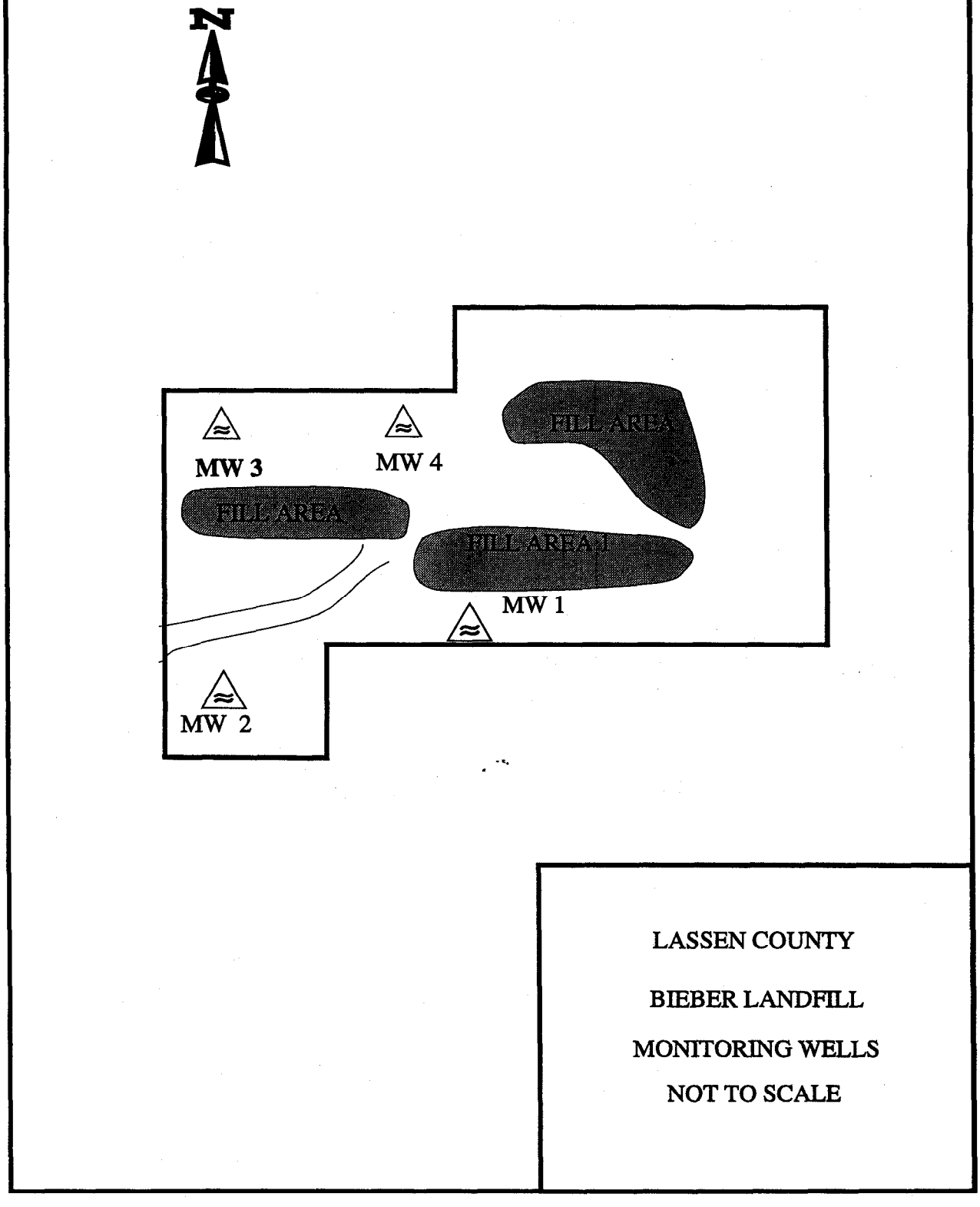


LASSEN COUNTY
BIEBER CLASS III LANDFILL
LASSEN COUNTY

SECTION 14, T38N, R7E, MDB&M
BIEBER CA, 7.5' USGS QUAD

SCALE: 1 INCH = 2,000 FEET

ATTACHMENT B



Attachment 1

MONITORING PARAMETERS FOR DETECTION MONITORING

Surrogates for Metallic Constituents:

pH
Total Dissolved Solids
Specific Conductivity
Chloride
Sulfate
Nitrate nitrogen

Constituents included in VOC_{water} (by USEPA Method 8260):

Acetone
Acrylonitrile
Benzene
Bromochloromethane
Bromodichloromethane
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1-Dichloroethylene (1,1-Dichloroethene; Vinylidene chloride)
cis-1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
2-Hexanone (Methyl butyl ketone)
Methyl bromide (Bromomethene)
Methyl chloride (Chloromethane)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)

Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
4-Methyl-2-pentanone (Methyl isobutylketone)
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
1,1,1-Trichloethane (Methylchloroform)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene)
Trichlorofluoromethane (CFC-11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride
Xylenes

Attachment 2

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Inorganics (by USEPA Method):

Aluminum	6010
Antimony	6010
Barium	6010
Beryllium	6010
Cadmium	6010
Chromium	6010
Chromium VI^+	7197
Cobalt	6010
Copper	6010
Iron	6010
Manganese	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Arsenic	7061
Lead	7421
Mercury	7470
Nickel	7520
Selenium	7741
Thallium	7841
Cyanide	9010
Sulfide	9030

[1] Report all peaks identified by the EPA test methods. Ground water and leachate samples shall be analyzed and reported as dissolved. Surface water samples shall be analyzed and reported as total recoverable metals as specified in EPA-600/4-79-020 dated March 1993. Unsaturated zone water samples shall be analyzed and reported as totals.

Volatile Organics (USEPA Method 8260):

Acetone
Acetonitrile (Methyl cyanide) Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene) Benzene
Bis(2-ethylhexyl) phthalate
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide

Volatile Organics (USEPA Method 8260) (continued):

Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dribromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1-Dichloroethylene (1,1-Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1 ,3-Dichloropropene
trans- 1,3-Dichloropropene
Ethylbenzene
Hexachlorobutadiene
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Isodrin
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl methacrylate
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)

Volatile Organics (USEPA Method 8260) (continued):

Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane, Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

Semivolatile Organics (USEPA Method 8270) (continued):

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methyethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
Chlordane
p-Chloroaniline

Semivolatile Organics (USEPA Method 8270) (continued):

Chlorobenzilate
p-Chloro-m-cresol (4-Chloro-3-methylphenol)
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Dieldrin
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimehtylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde

Semivolatile Organics (USEPA Method 8270) (continued):

Ethyl methacrylate
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isophorone
Isosafrole
Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
Naphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)
N-Nitrosodiethylamine (Diethylnitrosamine)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitrosodiphenylamine (Diphenylnitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)
N-Nitrosomethylethylamine (Methylethylnitrosamine)
N-Nitrosopiperidine
N-Nitrosospyrrolidine
5-Nitro-o-toluidine

Semivolatile Organics (USEPA Method 8270) (continued):

Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
Toxaphene
1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

Organophosphorus Compounds (USEPA Method 8141):

0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)
Dimethoate
Disulfoton
Methyl parathion (Parathion methyl)
Parathion
Phorate

Chlorinated Herbicides (USEPA Method 8150):

2,4-D (2,4-Dichlorophenoxyacetic acid)
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

INFORMATION SHEET

LASSEN COUNTY
FOR THE CLOSURE OF THE
BIEBER CLASS III LANDFILL
LASSEN COUNTY

The 20-acre Bieber Landfill (SWIS No. 18-AA-0003) comprised of Assessor's Parcel No. 001-130-04 is one-half mile north of downtown Bieber and Highway 299 in Lassen County. The facility is owned and operated by Lassen County Department of Public Works and is adjacent to Big Valley Lumber Company's sawmill in Section 14, T38N, R7E, MDB&M.

WDRs Order No. 74-462, adopted 24 October 1974, on the facility, is no longer in conformance with Chapter 15 or RCRA Subtitle D which covers municipal solid waste sites. The facility has been in operation for over forty years. Prior to 1974, two small pits were used for open pit burning. From 1974 to 1987, the landfill was operated as a sanitary landfill with three separate trenched areas. The trenches were open and waste was compacted to one end, then backfilled. This operation covered a total of 4 acres. Trenches have been eliminated to reduce ponding of water since 1988. The landfill contains an estimated 39,000 cubic yards of residential, commercial, and industrial solid wastes, which extends to a depth of 12 feet and occupies less than 5 acres of the site. A transfer station has been installed and the site is to be closed.

Lithology of monitoring wells MW-1 and MW-2 (installed 1984) indicates predominantly sands and gravel to a total depth of 40 feet, with the exception of approximately 15 feet of clay encountered in MW-2. Lithology of MW-3 and MW-4, installed in 1988 as part of the SWAT investigation, indicates silty sands to a depth of approximately 30 feet where volcanic bedrock is encountered and the boreholes terminated. Shallow ground water ranges from 15 to 30 feet below the site depending on the time of year, with ground water movement toward the northeast in the fall and towards the southwest in the winter and spring. The deeper ground water flow appears to be to the southeast with a gradient of 0.014 ft/ft.

The June 1988 SWAT and subsequent monitoring indicate there is no off-site migration of hazardous waste; however, elevated levels of chemical oxygen demand (COD), chloride, Electrical Conductivity (EC), Total Dissolved Solids (TDS), and t-1,2-dichloroethane were found in MW-1 at elevated concentrations. This is indicative of leachate generated by decomposition of residual nonhazardous waste. Geochemical analysis of ground water indicates a relatively high variability of dissolved constituents and may be a result of the high variability of the near surface formations. Domestic drinking water is taken from deeper aquifers.

Site elevation range from 4,136 to 4,140 feet mean sea level (MSL). Surface water runoff is to the southwest and the Pit River. The site is 1,500 feet west of the Pit River (HSA No. 526.61) and is outside the 100-year flood plain. The average rainfall for the area is 20 inches per year and the annual mean pan evaporation is 55 inches.

GDD:djc 2/24/95